High-Reliability Safety Program Development

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Who am I?

- Cory Worden
- Manager of System Safety with Memorial Hermann
- Previous lives
- Education
Today’s Syllabus

• What is ‘High-Reliability?’

• Safety Program Development
  • Hazard Analysis and Risk Assessment
  • Hierarchy of Controls
  • Information Program
  • Leading Indicators and Rewards/Recognition
  • Targeted Controls and Information
  • Lagging Indicators

• Putting the Puzzle Pieces Together
What is High-Reliability?
High-Reliability

- Methodical and systemic hazard controls applied consistently to avoid catastrophic results
- Applies to conditions and behaviors
- Allows for engagement and decentralization
- Validity
- Reliability
- High-Reliability vs. Compliance
ERM

- Enterprise Risk Management
  - **Hazard Risk** – controllable operating risks (i.e. Workplace Safety)
  - **Operational Risk** – risk associated with day-to-day operations
  - **Strategic Risk** – risks associated with long-term planning efforts
  - **External Risk** – generally uncontrollable risks that may lead to internal risks (i.e. Hurricane leading to EM issues)
ERM

- Enterprise Risk Management

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<tr>
<th>Risk Control</th>
<th>Risk Transfer</th>
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<td>Loss Prevention / Loss Control</td>
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<th>Risk Acceptance</th>
<th>Risk Avoidance</th>
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Efforts overlap and intertwine (i.e. Management of Change)
Theoretical Underpinnings

- Normal Accident Theory
- High-Reliability Theory
What causes accidents?
Causal Factors

- Accidents and Incidents - Hienrich
  - 88% caused by Unsafe Acts
  - 10% caused by Unsafe Conditions
  - 2% caused by Acts of God
Leading Accident Prevention
Leadership Dynamics

Optimal Team Management

Hyper Macro-Management
Apathy → Power Struggles

Hyper Micro-Management
Fear → Resentment

Leadership and Associated Effects on Team
Safety Math

Credibility = (Integrity + Proven Competence) + Relationships

General Stanley McChrystal
Hearts and Minds

- Defiantly Unsafe: 25%
- Subject to local culture: 50%
- Diligently Safe: 25%
Safety Program Development
Engagement and Support

Consultation

Set the Example

Engagement

Communication

Communication and Committees

Follow Safe Practices and Procedures

Hazard Analysis

Hierarchy of Controls

Information Program

Lead Indicators

Targeted Controls and Information

Investigations and RCA

Participation

Recognition

Support

----- All Employees

----- Leadership

----- Occupational Health and Safety
Committees

- MHHS Corporate OHS
- System-Wide Safety Committee
  - 1-2 key members from each campus
  - Provides communication, benchmarking, and best practices across the entire system

Campus Safety Committees
- Each campus' committee
- Made of members from each department
- A cross-section of management and employees

Campus Communication Platforms

Information and Initiatives
Program Benchmarks

- Communication - Committees, Coaches, Huddles, and more
- Hazard Analysis / Risk Assessment
- Hierarchy of Controls
- Information Program
- Leading Indicators / Incentive/Recognition Programs
- Targeted Controls and Information
- Lagging Indicators
  - Root Cause Analysis / Preventive and Corrective Actions

Accident Numbers
Hazard Analysis
Hazard Identification

• Employee Engagement opportunity
• What hazards exist?
  • Conditions
  • Behaviors
  • Hazard identification challenges
  • Transitions
  • Individual Assessments
  • Management of Change
Hierarchy of Controls
Hazard Controls

- Hazard controls are implemented based on prioritization by the Hierarchy of Controls
- Most to least effective depending on the hazard
- This is the opportunity for *compliance*
What it takes to control a workplace hazard.....

“\textbf{I want} to work safely.”

Operational Excellence

“I want to work safely.”

Hierarchy of Controls

“The System is making me work safely.....”

Regulatory Compliance (OSHA 29 CFR 1910)

“The government is making me work safely....”

* \textbf{Use} of Hazard Controls
* Avoidance of Dangerous States of Mind
* Avoidance of the Four Critical Errors
* Engagement, Observations & Inspections

* \textbf{Implementation} of Hazard Controls (in order of precedence)
  * Hazard Elimination
  * Hazard Substitution
  * Engineering Controls
  * Administrative Controls
  * Personal Protective Equipment

* Training provided for all hazard controls as parts of the integrated work process

* \textbf{Legal Requirements}
* Specific hazard areas have specific regulations that are required by federal Department of Labor/OSHA law (examples – Respiratory Protection, Bloodborne Pathogens, PPE, HAZCOM and more)

* Hazard areas that don’t have specific regulations are required to be controlled by the \textbf{General Duty Clause}; these hazard controls can be determined by the Hierarchy of Controls

“\textbf{I want} to work safely...”

“The System is making me work safely.....”

“I want to work safely.”

Basic

Better

Best
Hierarchy of Controls

- Hazard elimination
- Hazard substitution
- Engineering control
- Administrative control
- Personal Protective Equipment
- Training*
Training*

Notes on Training:

- Training is required for all hazard controls – before employees can utilize the control, they’ll need to know how to

- Training as a hazard control (without another control also in place such as an engineering control) is not as effective as others – there is nothing in place to prevent injuries other than employee recollection

- Training also includes Behavior-Based concepts and situational awareness/conditioning
Art and Science

- Elimination
- Substitution
- Engineering
- Admin
- PPE
- Training

Art
Science
Occurrence Disease or HIP

Patient is infectious

Treat Patient – Be careful!

Patient symptoms

Need hazard control or assistance

Reassess situation

Need equipment, need assistance

Colonel Boyd’s OODA Loop

Observe

Orient

Decide

Act

Norms

Training

Hazard

Risk

Expectations

Find PPE / Follow Procedures

Protect Yourself

Treat Patient – Be careful!

Need hazard control or assistance
Gray Area

- When can Engineering and Administrative controls coincide?
- At what point do Engineering controls decrease personal accountability and safe behavior (complacency)?
- Are training and education the least effective controls or an all-inclusive necessity?
- Can training include Behavior-Based Safety and Job Safety Analysis?
- Strategic planning concerns
- Cost vs. Benefit
Due Diligence

- Hazard controls must be:
  - Communicated
  - Trained
  - Available
  - Accessible
  - Convenient
  - Overseen
  - Dually Accountable
Employee Safety Program without Dual Accountability

Leaders trying to enforce Employee Safety without employee engagement
Or Employees trying to work safely without leadership support and initiatives

Employee Safety Program with Dual Accountability

Employee Use of Hazard Controls

Leader Implementation of Hazard Controls

Science

Employee

Dual Accountability

Leader

Employee Awareness of States of Mind

Leader Communication and Oversight of Employee Safety Expectations
Engagement

- Human Resources/Organizational Development SME’s say that information must be presented 100 different ways to become hard-wired
- Educators say that it must be presented seven different ways seven times each
- Frequency
- Volume
- Reiteration
- Subliminal Effects
Examples

- Bulletin Boards
- Newsletters
- Safety Tailgates/Huddles
- Staff Meetings
- Executive Council / Board Meetings
- Safety Fairs
- New Employee Orientation
- And more!
Leading Indicators
What are Indicators?

Leading Indicators predict future events and/or positive efforts towards the prevention of injuries and/or illnesses.

Lagging Indicators come after the event has already happened.

Incident Reports
Workers Comp Claims
Near-Miss Reports
Inspection Reports
Observation Reports
Predictability

• If four out of five observed employees do not use patient handling equipment when handling patients, how does this correlate to a known injury causation of back strains?

• If your team sets a goal of one observation per employee per week, but you don’t meet the goal, what does that tell you about your level of safety engagement?

• What factors can we address in this finding to prevent injuries?
Training

• Does training focus on the hazard or the behavior expectation?
  • Controls must be in place
  • Expectation must be set
  • Training ensures the control and the expectation are known
  • Observations ensure the controls are in place and expectations are performed
  • Operations and safety are not separate
“Just Culture”

- Human Factors
  - Not playing ‘Gotcha!’
  - Not a punitive system
- Performance Issues
- Dual Accountability
Indicators vs. Accidents

- Leading
  - Unsafe Conditions/Acts
    - Conditions – 10% of accidents
    - Acts – 88% of accidents
    - Acts of God – 2% of accidents (EPC/EM)
    - Acts of God – 2% of accidents (EPC/EM) lead to one fatality

- Lagging
  - Near-Miss
  - Property Damage
  - Minor Injury
  - Major Injury
Rewards and Recognition

- Why should Incentive Programs be tied to Leading Indicators instead of Lagging Indicators?
- What gets rewarded gets done!
- What does this mean to Employee Safety and accident prevention?
Lagging Indicators
Lagging Indicators

- Total Case Incident Rate (Recordables)
- Incident Rate (All Cases, Frequency, ‘Warning Lights’)
- Days Away, Restricted, and Transitional Rate (Severity)

- ‘X’ x 200,000 / total hours worked
  - Applies at System and Campus levels
  - 200,000 is a designator for a sample population of 100 employees at 50 weeks a year, 40 hours a week
Discussion

- What shortfalls exist if we ONLY look at Lagging Indicators?
- How can Investigations turn Lagging Indicators into Leading Indicators?
Injury Cycle

- Effects on Employee Health
- Effects on Employee Culture
- Effects on Compliance
- Effects on Patient Care
- Incurred Costs (Direct Costs)

Injury

- SafetyNet Report
  - OHSA Recordkeeping Criteria
  - OSHA Recordable TICR

Indirect Costs (Short-staffing and more)

Open Medical Claim

Days Away, Restricted, and/or Transitional Duty (DART)
Reliability and Validity
Case Study - 1,500 Employee Acute-Care Hospital

Implementations in order:
- Ongoing engagement
- Ongoing post-accident investigations
- Safety Committee
- Hazard Analysis
- Hazard Controls
- Information Program
- Observations/Inspections
- Continual Improvement

Case Study - 1,500 Employee Acute-Care Hospital
Putting the Puzzle Together
Employee Safety – everyone participates, everyone communicates and everyone wins

Campus or Organization Leadership
Set the vision, values and expectations; respond to requests for support

Safety Committee or Environment of Care Team
“Big Picture” Indicators - # and types of leading indicators, # and types of lagging indicators and current initiatives

Employee Safety Committee (can communicate with other Committees as needed)
Analyze operational indicators and make requests for support when needed

Department Leadership
Delegation and development of leading indicators and local expectations and communication (set observation/inspection goals and more); Implement hazard controls or request support

Consult and Advise

Dual Accountability

Communication, Feedback, Input, Suggestions and more

Line Authority

Engage

Dual Accountability

Employees
Develop leading indicators, (perform observations and more) provide feedback and input
Patient Safety
- System Patient Safety
- Campus Patient Safety/Quality Committees
- Campus Leaders

Emergency Management
- System Emergency Preparedness Council
- Campus Emergency Preparedness Officers
- Campus Leaders
- Emergency Management

Infection Control
- Infection Control and Prevention
- Regional Infection Preventionists
- Campus Infection Preventionists
- Campus Infection Committee Committees
- Campus Leaders
- Infection Control

Physician Safety
- Contractor Safety

Severity to Full-Spectrum of Operations
- System Engineering
- Campus Engineers
- Campus EOC Committees
- Campus Leaders
- Campus Safety

Frequency of Occurrence
- Engagement * Hazard Analysis * Training and Education * Risk Assessment * Leading Indicators * Investigation

Mitigation
- Prevention
- Occ Health and Safety
- System Employee Safety Committee
- Campus Employee Safety Committee
- Employee Safety
- Campus Leaders
Full Circle

START

Hazard Analysis / Risk Assessment and Hierarchy of Controls Implementation

Committees and Employee Engagement allow for buy-in – with hazards and risk analyzed and controls in place, safe behavior and safe conditions can become performance expectations.

Information Program

Provide recurring and consistent safety messages, training, education, bulletins, and more through all facets of communication.

Leading Indicators

Observations, Near-Miss Reporting, Inspections, and other leading indicators provide insight into unsafe behavior and conditions as well as overall program participation; this gives insight into the probability of future accidents.

Targeted Controls and Information

Using leading indicator data, hazard controls and information program material can be revisited to ensure effectiveness (if unsafe behavior exists with Patient Handling, do we have the best controls? Do we have information being communicated (training, education, oversight)?

Lagging Indicators / Preventative and Corrective Actions

Accident causes can be determined through Root Cause Analysis; information from this RCA can then be used in Hazard Analysis.

Safety First!
References

Questions?

- Questions?
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Thank you for your time and attention to Employee Safety!